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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/785,689 | 02/20/2001 | Luther E. Lindler | | 3889 |

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| EXAMINER | |
|---|---|
| GUCKER, STEPHEN | |

| ART UNIT | PAPER NUMBER |
|---|---|
| 1647 | |

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DATE MAILED: 12/29/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 09/785,689 | LINDLER ET AL. | |
| | Examiner | Art Unit | |
| | Stephen Gucker | 1647 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *25 August 2003*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-10* is/are pending in the application.

4a) Of the above claim(s) *7,8 and 10* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6 and 9* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. §§ 119 and 120**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

13)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

a) ☐ The translation of the foreign language provisional application has been received.

14)☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

**Attachment(s)**

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

***Response to Amendment***

**1.** The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

**2.** Any objections or rejections made in a previous Office Action that are not herein reinstated have been withdrawn.

**3.** The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP 608.01(o). Correction of the following is required: claim 1: "reactive with antibodies raised to Brucella species have a sequence of at least 90 amino acids from the sequence..." is not found in the specification as filed and needs to be amended into the specification. Also, claim 3: "a composition of matter comprising a protein of claim 1 attached to an antibody" is also not found in the specification as filed, nor are the dependent claims 5-6. All original claim language not found in the specification as originally filed needs to be amended into the specification at an appropriate location in the specification.

*Applicant's amendment filed 8/25/03 fails to remedy the objections to the specification listed above. For example, no "composition of matter" language is found in the specification. Additionally, the specification on page 4 recites "polypeptides containing over 90 amino acid peptides" [sic] and not "a sequence of at least 90 amino acids" as is recited in claim 1.*

**4.** Claims 1-6 and 9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The claim appears to be grammatically incorrect:

"...raised to [a?] Brucella species have [sic, having?] a sequence..." Furthermore, the claim is indefinite for failing to recite how the molecular weight of the protein was determined because different methods of calculating molecular weight will produce different results, such as SDS gels under reducing or non-reducing conditions, gel filtration (which is sensitive to the shape and hydration of the protein wherein SDS gels are not), mathematical calculation from the deduced amino acid sequence, etc.

*Applicant's arguments filed 8/25/03 have been fully considered but they are not persuasive. Applicant has not made the correction stated of replacing "have" with "having." Applicant also has not amended the claim to recite the method of molecular weight determination. Saying that the data is in the application is insufficient for limitations are not to be read into the claims based on the specification.*

**5.** Claims 1-6 are rejected under 35 U.S.C. 102(a) as being anticipated by Debbarh et al. ("Debbarh"). Debbarh teaches a 28 kD protein which is reactive with antibodies to Brucella (abstract and pages 39-44, Figures 3-4, and see discussion bridging pages 46-47). The protein is deemed to inherently have the peptide sequence claimed since it has the claimed molecular weight and is from the claimed genus and is reactive against antibodies to this genus. The protein is attached to a nitrocellulose support in the figures. When the antibody is attached to the protein it is deemed to meet the limitation of claim 6. Furthermore the protein is lyophilized from a cleared supernatant that can be considered a pharmaceutically acceptable carrier because it has already undergone nuclease treatment and two rounds of ultrafiltration, sufficient to sterilize the

composition (100 kDa cut off on the Amicon filter). In this state, the protein and supernatant could be used as an injectable antigen into animals if desired.

*The declaration filed on 8/25/03 under 37 CFR 1.131 has been considered but is ineffective to overcome the Debbarh reference. The declaration of Lindler is an unsubstantiated assertion of the conception of the claimed invention and is by itself, absent supporting evidence such as copies of dated laboratory notebook pages, insufficient to overcome the rejection based on 102(a). While conception is the mental part of the inventive act, it must be capable of proof, such as by demonstrative evidence or by a complete disclosure to another. Conception is more than a vague idea of how to solve a problem. The requisite means themselves and their interaction must also be comprehended. See Mergenthaler v. Scudder, 1897 C.D. 724, 81 O.G. 1417 (D.C. Cir. 1897).*

**6.** Claims 1-6 are rejected under 35 U.S.C. 102(b) as being anticipated by Riezu-Boj et al. ("Riezu-Boj") in light of Debbarh. Riezu-Boj teaches a protein which is reactive with antibodies raised to Brucella (abstract, pages 489-490, Figures 1-4, page 492, column 2). The protein is disclosed to have an apparent weight of 28.5 kD, which is within experimental and resolution error of the claimed 28 kD protein (see Debbarh, page 47, concerning the differentiation of antigenic proteins ranging from 28-32 kD apparent molecular mass (AMM) from Brucella). It is the position of the Examiner that the minor difference in AMM is not deemed significant in view of the aforementioned experimental error and that the protein comes from the same source and reacts in the same manner as that which is claimed. The protein is deemed to inherently have the peptide

sequence claimed since it is deemed to have the claimed molecular weight and is from the claimed genus and is reactive against antibodies to this genus. The protein is attached to a nitrocellulose support in the figures. When the antibody is attached to the protein it is deemed to meet the limitation of claim 6. Furthermore, the protein is found within both the saline and distilled water extracts of the antigenic preparations (methods disclosed on pages 489-490), both of which are pharmaceutically acceptable carriers. Although the instant specification (page 3, lines 19-22) states that the sera of Riezu-Boj does not react with the instant protein, which sera of Riezu-Boj is not identified. Page 491 of Riezu-Boj discloses over 70 different antisera, not all of which react with the 28.5 kDa protein, so depending on the antisera used and under what conditions, the statement made in the specification cannot exclude the prior art without further explanation or clarification. In addition, the description of the experiments performed on page 9, lines 8-17, of the instant specification is insufficient because it states that "the antibodies raised to the protein Omp28 of the invention interacted with Omp28 protein, but did not react with any protein from the Riezu-Boj sera." The Riezu-Boj sera does not contain the 28.5 kDa protein, which the Examiner maintains anticipates the instant protein. Rather, the Riezu-Boj sera would contain antibodies against the 28.5 kDa protein, and not the protein itself. Finally, the instant disclosure states that "the protein of this invention was exposed to sera used in Riezu-Boj to determine whether the protein of the invention was reactive therewith. The protein identified as Omp28 (protein of this invention) and proteins of Riezu-Boj were identified on a Western blot. Antibodies against the Omp28 of the invention were then applied to the Western blot"

(page 9, lines 8-13). The Examiner is unclear as to how both proteins could be identified as being actually present on a Western blot (which uses antibodies to identify proteins) if the sera of Riezu-Boj did not react with the protein of the instant invention, *before* the application of antibodies against the Omp28, as specifically stated in the specification. A more likely explanation is that some of the sera of Riezu-Boj did, in fact, react with the Omp28.

*Applicant's arguments filed 8/25/03 have been fully considered but they are not persuasive. Applicant argues that the sera of Riezu-Boj did not react with the protein of the instant invention. The Examiner's detailed explanation against this argument is already of record, set forth above.*

**7.** This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

**8.** Claims 1, 4, and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Debbarh or Riezu-Boj in view of Serikawa et al. ("Serikawa"). The teachings of Debbarh and Riezu-Boj are as set forth in ¶5-6 above, respectively. They do not teach adjuvant in combination with an antigen from Brucella. Serikawa does teach Freund incomplete

adjuvant in combination with Brucella antigens (page 838). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the antigen of Debbarh or Riezu-Boj with the adjuvant of Serikawa in order to use the composition to increase antibody production because Debbarh provides the suggestion and motivation that the 28 kD protein is detectable early in infection and has a high frequency of reactivity in naturally infected animals (pages 46-47). This early onset and reactivity makes this composition highly desirable as a protective vaccine because the reactivity indicates good immunogenicity and the early onset is desirable for an immunological response from the vaccinated animal early rather than later in the course of the disease pathology, rendering the claim *prima facie* obvious.

*Applicant's arguments filed 8/25/03 have been fully considered but they are not persuasive. Applicant argues that the sera of Riezu-Boj did not react with the protein of the instant invention. The Examiner's detailed explanation against this argument is already of record, set forth above.*

**9.** No claim is allowed.

**10. THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

**11.** Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen Gucker whose telephone number is (703) 308-6571. The examiner can normally be reached on Monday to Friday from 0930 to 1800. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gary Kunz, can be reached on (703) 308-4623. The fax phone number for this Group is currently (703) 308-4242, but Applicant should confirm this by phoning the Examiner before faxing.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0196.

SG

Stephen Gucker

12/23/03

Yvonne Eyler

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